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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,226	05/08/2001	Jeffry G. Weers	0073.00	4017

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EXAMINER	
WELLS, LAUREN Q	

ART UNIT	PAPER NUMBER
1617	

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/851,226	WEERS ET AL.	
	Examiner	Art Unit	
	Lauren Q Wells	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,8,9,11-15,17-32,44-55,57-62,64,65 and 67-78* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5, 8-9, 11-15, 17-32, 44-55, 57-62, 64-65, 67-78* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-5, 8-9, 11-15, 17-32, 44-55, 57-62, 64-65, 67-78 are pending. The Amendment filed 1/26/04, amended claims 1, 9, 17, 18, 29-32, 44, 49, 51, 52, 54, 57-59, 62, 64, 65, 67, 70, 71, cancelled claims 16, 56, 66, and added claims 72-78.

Double Patenting Rejection Maintained

The rejection of claims 1-3, 8-9, 11-15, 17-22, 27-32, 44-55, 59-62, 64-65, 67-71, and newly added claims 72-78 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 7-23, 25, 27-30, 34-37, 41-45 of copending Application No. 09/568818 is MAINTAINED for the reasons set forth in the Office Action mailed 7/24/03, and those found below.

Applicant states, "When either the present case or the 09/568,818 case is indicated as being allowable, the double patenting issue will be addressed in the other case". This statement is acknowledged. However, the rejection is maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 72-74 and 77-78 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original disclosure does not provide support for the saturated phospholipids being zwitterionic.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 8-9, 11-15, 17-32, 44-55, 57-62, 64-65, 67-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weers et al. (6,309,623) in view of Materne et al. (GB 2065659).

The instant invention is directed toward a particulate composition comprising particles comprising a saturated, zwitterionic phospholipid and a polyvalent cation at a molar ratio of polyvalent cation to phospholipid of at least 0.05 effective to increase the gel-to-liquid crystal transition temperature of the particle compared to particles without the polyvalent cation, wherein the particulate composition is storage stable, and methods of administering such a composition to the pulmonary system of a patient.

Weers et al. teach a stable respiratory dispersion for pulmonary delivery of one ore more bioactive agents comprising a suspension medium having dispersed therein a plurality of perforated microstructures having a mean aerodynamic diameter of less than 5 micrometers and comprising at least one bioactive agent. The perforated microstructures are taught as comprising 1-90% surfactants, wherein surfactants are selected from saturated phospholipids, nonionic detergents, nonionic block copolymers, ionic surfactants, and combinations thereof. Dipalmitoylphosphatidylcholine is taught as a saturated phospholipid surfactant (saturated, zwitterionic phospholipids, as recited in the instant specification), and poloxamer is taught as a

surfactant. Inorganic salts such as calcium chloride are taught as optional excipients, which adjust the pH. Budesonide, fluticasone propionate, salmeterol, and formoterol are taught as bioactive agents that can comprise from 5-90% of the composition. Taught are structural matrices comprising the perforated microstructures, wherein polyvinyl alcohols, polyvinyl pyrrolidones, and polysaccharides are taught as part of the matrix. The perforated microparticles are taught as hollow and/or porous. The suspension medium of the microparticles is taught as a non-aqueous medium. The density of the particles is taught as less than 0.05g/cm3. Taught is administration of the compounds in composition to the lung of a patient in need of such treatment, using a metered dose inhaler. The composition has a gel to liquid crystal phase transition greater than about 40 C. The reference lacks an exemplification of a composition comprising saturated phospholipid and divalent cation, and a teaching of the ratio of cation to phospholipid. See Col. 4, line 5-Col. 8, line 65; Col. 11, lines 25-42; Col. 16, line 28-Col. 20, line 20; Col. 24, line 56-Col. 25, line 5; Col. 40, line 54-Col. 41, line 55.

Materne teaches calcium phosphatidycholine chloride for pharmaceutical preparations. A ratio of 0.5:1-2:1 of cation to phospholipid is taught. Such as ratio is taught as highly stable for pharmaceutical formulation. See pg. 1, lines 80-129.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to exemplify a suspension medium comprising calcium chloride and dipalmitoylphosphatidyl choline because Weers et al. exemplify a composition comprising dipalmitoylphosphatidyl choline and they teach that adding salts fine tunes the stabilized dispersions for maximum life and ease of administration.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to teach the ratio of calcium to dipalmitoylphosphatidyl choline as at least 0.05, as taught by Materne, because of the expectation of achieving a highly stable pharmaceutical microparticle formulation and because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Since the microparticles taught by the combination of Weers et al. and Materne et al. are the same as those taught by the instant claims, the microparticles of Weers et al. must have the same gel-to-liquid transition temperatures and storage stability as the microparticles of the instant invention.

Regarding Applicant's functional limitations, attention is respectfully directed to *General Electric Company v. Wabash Appliance Corporation et al* 37 USPQ 466 (US 1938), at 469, speaking to functional language at the point of novelty as herein employed: "the vice of a functional claim exists not only when a claims is "wholly" functional, if that is ever true, but when the inventor is painstaking when he recites what has already been seen, and then uses conveniently functional language at the exact point of novelty". Functional language at the point of novelty, as herein employed by Applicants, is further admonished in *University of California v. Eli Lilly and Co.* 43 USPQ2d 1398 (CAFC 1997) at 1406: stating this usage does "little more than outlin[e] goals appellants hope the recited invention achieves and the problems the invention will hopefully ameliorate". Claims employing functional language at the point of novelty, such as Applicants', neither provide those elements required to practice the inventions,

nor "inform the public during the life of the patent of the limits of the monopoly asserted" *General Electric Company v. Wabash Appliance Corporation et* supra, at 468.

Claims 23-25 are directed to a future intended use of the composition. Thus, these claims are not given patentable weight.

The recitation for delivery to the pulmonary system has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Response to Arguments

Applicant argues, "Weers et al. does not render claim 1, for example, unpatentable" and goes on to state that Weers et al. that Weers do not teach or suggest claim 1. However, in this first paragraph of arguments, Applicant provides no reasons why Weers et al. do not meet the limitations of claim 1, as asserted by the Examiner in the above rejection and the rejection of the previous Office Action. Thus, such an argument is not persuasive.

Applicant argues, "Materne et al. does not teach adding a polyvalent cation to a saturated phospholipids. Instead, Materne et al. teaches adding a polyvalent cation to an unsaturated phospholipids". This argument is not persuasive. It is respectfully pointed out that Materne et al. is merely relied upon as a secondary reference for its teachings of the ratio of cation to

saturated phospholipids. The instant rejection does not attempt to substitute the polyvalent cations and phospholipids of Materne et al. into the invention of Weers et al.

Applicant argues, "Even if so motivated, the person of ordinary skill in the art would have incorporated the teaching of using a polyvalent cation and an unsaturated phospholipids rather than arriving at the Applicant's claimed invention". This argument is not persuasive. Again, it is respectfully pointed out that the instant rejection does not attempt to substitute the polyvalent cations and phospholipids of Materne et al. into the invention of Weers et al. Weers et al. teach the combination of a saturated phospholipid and divalent (polyvalent) cations.

Applicant argues, "Quite unexpectedly, it has been discovered that the gel-to-liquid transition temperature is increased when proper amounts of polyvalent cation is added to a saturated phospholipids, but the transition temperature is not increased when the polyvalent cation is added to an unsaturated phospholipids (see paragraph 7 of the Weers declaration). Thus, the unexpected result of increasing the gel-to-liquid transition temperature and thereby increasing the storage stability of the particles would not have been recognized by the person of ordinary skill in the art without the benefit of Applicant's disclosure". This argument is not persuasive. It is respectfully pointed out that the "Weers declaration" of 12/2/02 was directed to a rejection, wherein Materne et al. was the primary reference. However, the instant rejection, does not rely on Materne et al. as a primary reference, but relied upon Weers et al. (6,309,623), which teaches the combination of a saturated phospholipids and divalent cation. Thus, the declaration of 12/2/02 is not sufficient to overcome the teachings of Weers et al.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lauren Q Wells whose telephone number is 571-272-0634. The examiner can normally be reached on M&R (5:30-4).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lqw

SREENI PADMANABHAN
SUPERVISORY PATENT EXAMINER